

AMENDMENT UNDER 37 C.F.R. § 1.111 AND

STATEMENT OF SUBSTANCE OF INTERVIEW

Attorney Docket No.: Q83924

Application No.: 10/516,506

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in the application:

**LISTING OF CLAIMS:**

1-31. (canceled).

32. (currently amended): An electrode for electric discharge surface treatment, the electrode is a green compact made by molding metallic powders or metallic compound powders, the green compact being heat treated and used for electric discharge surface treatment in which a pulsed electric discharge is generated between the electrode and a work in a dielectric fluid to form by the electric discharge energy on the surface of the work a coat of a material of the electrode or of a substance that is generated by a reaction of the electrode due to the electric discharge energy, wherein the electrode contains 40 volume % or more Co, Ni, or Feme metallie material that is not carbonized or is hard to be carbonized.

33. (canceled).

34. (currently amended): An electrode for electric discharge surface treatment, the electrode is a green compact made by molding metallic powders or metallic compound powders, the green compact being heat treated and used for electric discharge surface treatment in which a pulsed electric discharge is generated between the electrode and a work in a dielectric fluid to form by the electric discharge energy on the surface of the work a coat of a material of the

AMENDMENT UNDER 37 C.F.R. § 1.111 AND

STATEMENT OF SUBSTANCE OF INTERVIEW

Attorney Docket No.: Q83924

Application No.: 10/516,506

electrode or of a substance that is generated by a reaction of the electrode due to the electric discharge energy, wherein the electrode is made by mixing a powder of at least one of Co, Ni, and Fe to form a powder of an alloy material that is alloyed by mixing a plurality of elements in a predetermined ratio.

35. (canceled).

36. (previously presented): The electrode for electric discharge surface treatment according to claim 34, wherein the alloy material contains 40 volume % or more metallic material that is not carbonized or is hard to be carbonized.

37. (canceled).

38. (previously presented): The electrode for electric discharge surface treatment according to claim 36, wherein the metallic material that is not carbonized or is hard to be carbonized is Co, Ni, or Fe.

39. (currently amended): The electrode for electric discharge surface treatment according to claim 34, wherein the alloy material is one of the following groups: a Co alloy containing Cr, Ni, and W with Co as a main component; a Co alloy containing Mo, Cr, and Si with Co as a main component; an Ni alloy containing Cr, and Fe with Ni as a main component; an Ni alloy

AMENDMENT UNDER 37 C.F.R. § 1.111 AND

STATEMENT OF SUBSTANCE OF INTERVIEW

Attorney Docket No.: Q83924

Application No.: 10/516,506

| containing Cr, Mo and Ta with Ni as a main component; and/or an Fe alloy containing Cr, Ni, Mo, (Cb + Ta), Ti, and Al with Fe as a main component.

40. (canceled).

41. (currently amended): A method of electric discharge surface treatment, comprising: generating pulsed electric discharge in a dielectric fluid between a green compact electrode and a work, the electrode being made by molding a metallic powder or metallic compound powders; and

forming a coat that contains a carbide and a non-carbonized metallic component in a predetermined ratio based on materials supplied from the green compact electrode on a surface of the work using an energy of the electric discharge,wherein the ratio of the non-carbonized metallic component is 30 volume % or more.

42. (canceled).

43. (currently amended): The method of electric discharge surface treatment according to claim 4142, wherein the electrode is discharged to form the coat ~~is formed~~ on the surface of the work ~~by letting discharge the electrode and wherein the electrode that~~ contains 40 volume % or more metallic material that is not carbonized or is hard to be carbonized.

AMENDMENT UNDER 37 C.F.R. § 1.111 AND

STATEMENT OF SUBSTANCE OF INTERVIEW

Attorney Docket No.: Q83924

Application No.: 10/516,506

44. (previously presented): The method of electric discharge surface treatment according to claim 41, wherein the metallic material that is not carbonized or is hard to be carbonized is Co, Ni, or Fe.

45. (currently amended): The method of electric discharge surface treatment according to claim 41, wherein the material of the work is a directional control alloy such as single crystal alloy or unidirectionally solidified alloy.

46. (currently amended): A method of electric discharge surface treatment of using an electrode that is a green compact made by molding metallic powders or metallic compound powders, the green compact being heat treated, for electric discharge surface treatment in which a pulsed electric discharge is generated between the electrode and a work in a dielectric fluid to form by the electric discharge energy on the surface of the work a coat of a material of the electrode or of a substance that is generated by a reaction of the electrode due to the electric discharge energy, wherein the coat is formed by using an electrode made by mixing a powder of at least one of Co, Ni, and Fe to from a powder of an alloy material that is alloyed by mixing a plurality of elements in a predetermined ratio.

47. (canceled).

AMENDMENT UNDER 37 C.F.R. § 1.111 AND

STATEMENT OF SUBSTANCE OF INTERVIEW

Attorney Docket No.: Q83924

Application No.: 10/516,506

48. (currently amended): The method of electric discharge surface treatment according to claim 46, wherein the material of the work is a directional control alloy such as single-crystal alloy or unidirectionally solidified alloy.

49. (previously presented): The method of electric discharge surface treatment according to claim 46, wherein the alloy material contains 40 volume % or more metallic material that is not carbonized or is hard to be carbonized.

50. (canceled).

51. (previously presented): The method of electric discharge surface treatment according to claim 49, wherein the metallic material that is not carbonized or is hard to be carbonized is Co, Ni, or Fe.

52. (currently amended): The method of electric discharge surface treatment according to claim 46, wherein the alloy material is one of the following groups: a Co alloy containing Cr, Ni, and W with Co as a main component; a Co alloy containing Mo, Cr, and Si with Co as a main component; an Ni alloy containing Cr, and Fe with Ni as a main component; an Ni alloy containing Cr, Mo and Ta with Ni as a main component; and/or an Fe alloy containing Cr, Ni, Mo, (Cb + Ta), Ti, and Al with Fe as a main component.

53. (canceled).

AMENDMENT UNDER 37 C.F.R. § 1.111 AND

STATEMENT OF SUBSTANCE OF INTERVIEW

Attorney Docket No.: Q83924

Application No.: 10/516,506

54. (currently amended): An apparatus for electric discharge surface treatment, comprising:

an electrode of a green compact made by molding powders containing 40 volume % or more Co, Ni, or Fe, metallic material that is not carbonized or is hard to be carbonized; wherein  
the green compact is heat treated;

a dielectric fluid supply unit to immerse the electrode and a work in the dielectric fluid or that supplies the dielectric fluid between the electrode and the work; and

a power source unit that generates pulsed electric discharge by applying voltage between the electrode and the work.

55. (canceled).

56. (currently amended): An apparatus for electric discharge surface treatment, comprising:

an electrode of green compact made by mixing a powder of at least one of Co, Ni, and Fe to from a powder of an alloy material that is alloyed by mixing a plurality of elements in a predetermined ratio, wherein the green compact is heat treated;

a dielectric fluid supply unit to immerse the electrode and a work in the dielectric fluid or that supplies the dielectric fluid between the electrode and the work; and

a power source unit that generates pulsed electric discharge by applying voltage between the electrode and the work.

AMENDMENT UNDER 37 C.F.R. § 1.111 AND

STATEMENT OF SUBSTANCE OF INTERVIEW

Attorney Docket No.: Q83924

Application No.: 10/516,506

57. (canceled).

58. (previously presented): The apparatus for electric discharge surface treatment according to claim 56, wherein the alloy material contains 40 volume % or more metallic material that is not carbonized or is hard to be carbonized.

59. (canceled).

60. (previously presented): The apparatus for electric discharge surface treatment according to claim 58, wherein the metallic material that is not carbonized or is hard to be carbonized is Co, Ni, or Fe.

61. (currently amended): The apparatus for electric discharge surface treatment according to claim 56, wherein the alloy material is one of the following groups: a Co alloy containing Cr, Ni, and W with Co as a main component; a Co alloy containing Mo, Cr, and Si with Co as a main component; an Ni alloy containing Cr, and Fe with Ni as a main component; an Ni alloy containing Cr, Mo and Ta with Ni as a main component; and-or an Fe alloy containing Cr, Ni, Mo, (Cb + Ta), Ti, and Al with Fe as a main component.

62. (canceled).